



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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January 18, 2000

CERTIFIED RETURN RECEIPT

P 074 976 804

Darin Olson  
ECDC Environmental  
1111 West Highway 123  
East Carbon, Utah 84520

Re: Initial Review of Notice of Intention to Commence Large Mining Operations, ECDC  
Environmental, ECDC Clay Mine, M/015/062, Emery County, Utah

Dear Mr. Olson:

The Division has completed a review of your draft Notice of Intention to Commence Large Mining Operations for the ECDC Mine, located in Emery County, Utah, which was received October 22, 1999. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

The Division will suspend further review of the mine NOI until your response to this letter is received. If possible, please provide your response within 30-45 days of your receipt of this letter. If you have any questions in this regard please contact me, Doug Jensen, Lynn Kunzler, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg  
Permit Supervisor  
Minerals Regulatory Program

jb

Attachment: Review, seedmix, surety estimate  
o:\review\m15-62.rvw

## **REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS**

**ECDC Environmental  
ECDC Clay Mine  
M/015/062  
(January 18, 2000)**

### **R647-4-106 - Operation Plan**

#### ***106.6 Plan for protecting & redepositing soils***

Please show the location of topsoil and overburden stockpiles on the map. Also, seed mix C, which is to be used on the stockpiles, could be reduced by half and still provide adequate seed for establishing a protective vegetative cover (please refer to the attached seed mix B for suggested revision to your interim seed mix). (LK)

#### ***106.8 Depth to groundwater, extent of overburden, geology***

The plan fails to identify any wells or groundwater sources in the area. Please verify if any ground water exists in the area or if any wells have been drilled in the vicinity of the mine. (TM)

#### ***106.9 Location & size of ore, waste, tailings, ponds***

Location of soil and overburden piles need to be shown on maps. Because no storage areas were noted, reclamation costs are higher than normal in the surety calculations. Final reclamation costs could be decreased by having multiple storage areas, if this is possible. (DJ)

### **R647-4-107 - Operation Practices**

#### ***107.2 Drainages to minimize damage***

The relocation of the drainage channel entering the site from the Northwest needs to be addressed in the mine and reclamation plan. This information should include cross-sections of the existing drainage and the reclaimed drainage configuration and information of how this drainage channel will be handled both during operations and during reclamation. (DJ&TM)

#### ***107.3 Erosion control & sediment control***

There currently is no mention of sediment control in the permit application. Given the proximity to the Price River, it is appropriate that the issue of control of Storm Water be discussed in regards to how it will be handled both during both operations and upon reclamation. (TM)

### **R647-4-109 - Impact Assessment**

#### ***109.1 Impacts to surface & groundwater systems***

It is appropriate that a discussion of the potential impacts to surface and ground water be engaged given the proximity to the Price River. (TM)

#### **R647-4-110 - Reclamation Plan**

##### ***110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed***

Due to the difficulties of placing soil at a depth 3" to 4", the plan could be revised to create soil islands at greater depths. This will reduce bonding amounts for topsoil replacement. (DJ)

The original reclamation plan (March, 1993) called for "all quarry pits to be backfilled and graded with stockpiled overburden." The October, 1999 plan delineates an area noted as "bottomland area", which is to receive no treatments (soil or overburden). This is a change from this original plan which will require ECDC to apply for a variance. Our surety calculations reflect reclamation of the entire site. (DJ)

##### ***110.5 Revegetation planting program***

The proposed seed mixes should be revised to eliminate some species that would be difficult to establish in the area, and to reduce the rates of most species, including some very competitive species. This would result in a more diverse vegetation community after reclamation. Also, it is suggested that only one seed mix be used for final reclamation. Experience has shown that for small sites such as this one, multiple seed mixes are difficult to manage and apply to the designated areas. Attached are revised seed mixes for your consideration. Please acknowledge if these revisions are acceptable. (LK)

#### **R647-4-111 - Reclamation Practices**

##### ***111.2 Reclamation of natural channels***

Refer to comments under R647-4-107.2. (DJ&TM)

##### ***111.3 Erosion & sediment control***

How will sediment and disturbed area runoff be prevented from leaving the site during extreme rainfall events? (TM)

##### ***111.12 Topsoil redistribution***

Placing topsoil in 3" to 4" lifts will be very difficult and costly. Placing soil in 10" to 12" lifts on selected "islands" of recontoured disturbance could possibly provide a more cost effective option and lead to more effective long-term revegetation success. (DJ)

#### **R647-4-113 - Surety**

*Comments on Surety calculations:*

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M/015/062  
January 18, 2000

Due to the size of the site, using only a D9 dozer may not be a cost effective tool. Spreading soils in 3" to 4" lifts will be extremely difficult. See comments under R647-4-111.12. (DJ)

Line 27 - Mining the remaining site with an average overburden depth of 5' will generate ~142,000 cu yds of material. This does not take into account the overburden piles that already exist at the site. Recontouring these waste piles will be necessary after material needed for reclamation is removed.

Lines 30 & 32 - Takes into account the ripping of the entire 29.6 acres site.

Line 39 -Replacement of drainage, removed during the mining.

Line 40 - Yardage to cover 29.6 acres with 1' of overburden.

Line 41 - Placing 3" to 4" of soil over 17.8 acres.

Line 47 - Due to poor and/or non-existent soils in this area, amendments will be necessary.

This cost is calculated using composted manure. Biosolids from the Wellington site may be a cheaper option. Hydromulch with 60 lbs of tackifier, 200 lbs of fertilizer and virgin wool fiber/acre (as used on the Pagano Site) may also be an option for this site. (DJ)

Attachment: Seedmix

Recommended Revegetation Species Lists  
for  
ECDC Environmental  
ECDC Clay Mine  
M/015/062  
(January 18, 2000)

***Seed Mixture A***

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
<b>GRASSES:</b>		
'Hycrest' crested wheatgrass	<u><i>Agropyron cristatum 'hycrest'</i></u>	0.5
Intermediate wheatgrass	<u><i>Agropyron intermedium</i></u>	2.0
Western wheatgrass	<u><i>Agropyron smithii</i></u>	2.0
Indian ricegrass	<u><i>Oryzopsis hymenoides</i></u>	2.0
Great basin wildrye	<u><i>Elymus cinereus</i></u>	2.0
Alkali sacaton	<u><i>Sporobolus airoides</i></u>	0.1
<b>FORBS:</b>		
Ladak alfalfa	<u><i>Medicago sativa 'ladak'</i></u>	1.0
Yellow sweetclover	<u><i>Melilotus officinalis</i></u>	0.5
Scarlet globemallow	<u><i>Sphaeralcea coccinea</i></u>	0.5
<b>SHRUBS:</b>		
Black sage	<u><i>Artemisia nova</i></u>	0.2
4-wing saltbush	<u><i>Atriplex canescens</i></u>	1.0
Shadscale	<u><i>Atriplex confertifolia</i></u>	1.0
Winterfat	<u><i>Ceratoides lanata</i></u>	1.0
Rubber rabbitbrush	<u><i>Chrysothamnus nauseosus</i></u>	0.5
Forage kochia	<u><i>Kochia prostrata</i></u>	0.5
<b>Total Seed</b>		<b>15.3 lbs/ac</b>

***Seed Mixture B - Interim Mix***

<u>Common Name</u>	<u>Species Name</u>	<u>Rate lbs/ac (PLS)</u>
'Hycrest' crested wheatgrass	<u><i>Agropyron cristatum 'hycrest'</i></u>	1.0
Thickspike wheatgrass	<u><i>Agropyron dasystachum</i></u>	3.0
Newhy grass	<u><i>Agropyron repens X Agropyron Spicatum</i></u>	3.0
Ladak alfalfa	<u><i>Medicago sativa 'ladak'</i></u>	1.0
Yellow sweetclover	<u><i>Melilotus officinalis</i></u>	0.5
<b>Total Seed</b>		<b>8.5 lbs/ac</b>

\* Rate is for broadcast seeding methods. Reduce rate for grass species by 1/3 for drill seeding.



estimate D9	B	C	D	E	G	H
1	RECLAMATION SURETY ESTIMATE					
1	RECLAMATION SURETY ESTIMATE					
2	ECDC	last revision				10/12/98
3	ECDC Clay Mine					
4	M/015/062	Emery				
5	Prepared by Utah State Division of Oil, Gas & Mining					
6	-This estimate uses a D9 size dozer for most earthwork					
7						
8	Contingencies in estimate:					
9	Only a dozer was used to replace the topsoil and overburden in the plan. Because no stockpiles were					
10	noted on the facility map an exteme push distance of 400' was used. Some other options may be					
11	considered to reduce this cost.					
12	Equipment mobilized: Disc, Seed Drill					
13						
14	Note: actual unit costs may vary according to site conditions last unit cost update 10/12/98					
15	-Amount of disturbed area which will receive reclamation treatments =					32.8 acres
16	-Estimated total disturbed area for this mine =					32.8 acres
17	Activity	Quantity	Units	\$/unit	\$	Note
18	Safety gates, signs, etc. (mtls & installation)	0	sum	200	0	(1)
19						
20	Demolition of buildings & facilities	0	CF	0.25	0	(2)
21	Debris & equipment removal - trucking	2	trips	48	96	(3)
22	Debris & equipment removal - dump fees	0	ton	55	0	(4)
23	Debris & equipment removal - loading trucks w/FE loader	5	hours	176	880	(5)
24	Demolition & debris removal - general labor	10	hours	15	150	(6)
25	Regrading facilities areas	0.0	acre	337	0	(7)
26						
27	Regrading waste dump slopes	28,000	CY	0.33	9,240	(8)
28	Ripping waste dump tops	0.0	acre	250	0	(9)
29						
30	Ripping stockpile & compacted areas	11.8	acre	250	2,950	(9)
31						
32	Ripping pit floors	17.8	acre	250	4,450	(9)
33	Ripping pit access roads	0.0	acre	250	0	(9)
34	Creating safety berms or barriers around highwalls	0	LF	0.11	0	(10)
35						
36	Ripping access roads - dozer	3.2	acre	250	788	(9)
37	Regrading access roads - dozer	0.0	acre	337	0	(7)
38	Sidecast mtl replacement on steep roads- trackhoe	0	LF	0.85	0	(11)
39	Surface drainage restoration or construction	2300	LF	0.11	253	(10)
40	Overburden Replacement	28750	CY	0.66	18,975	
41	Topsoil replacement - dozer	9600	CY	1.32	12,672	(12)
42	Topsoil replacement - scraper	0	CY	1.05	0	(13)
43	Topsoil replacement - truck & FE loader	0	CY	2.55	0	(14)
44						
45	Mulching (2 ton/acre alfalfa)	0.0	acre	160	0	(00)
46	Fertilizing ( 100 lb/acre diammonium phosphate)	0.0	acre	90	0	(00)
47	Composted manure	32.8	acre	300	9,840	(00)
48	Broadcast seeding	9.7	acre	170	1,649	(00)
49	Drill seeding	23.1	acre	150	3,465	(00)
50	Hydroseeding	0.0	acre	800	0	(00)
51	Discing	0.0	acre	50	0	
52	General site cleanup & trash removal	5.0	acre	50	250	(00)
53						
54	Equipment mobilization	1	equip	1000	1,000	(00)
55						
56	Reclamation Supervision	7	days	372	2,604	(15)
57	Subtotal				69,262	
58	10% Contingency				6,926	
59	Subtotal				\$76,188	
60	Escalate for 5 years at 3.27% per yr				13,298	
61	Total				\$89,486	
62	Rounded surety amount in yr 2004-\$				\$89,500	
63	Average cost per disturbed acre =				\$2,729	
64						
65						

estimate D9	H	I	J	K	L	M	N	P	Q	R
1		RECLAMATION SURETY ESTIMATE								
1		RECLAMATION SURETY ESTIMATE								
2		ECDC CLAY MINE								
3		M/015/062				Emery County				
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15										
16										
17	Note									
18	(1)	DOGM lump sum assumed								
19										
20	(2)	Means Heavy Construction Cost Data 1999, 020-604-0100, mix of bldg. types, avg., excluding dump fees								
21	(3)	Means 1999, 020-620-5100, \$0.48/mile for >8CY truck; assumed 100 miles round trip								
22	(4)	Means 1999, 020-612-0100, dump charges, typical urban city, tipping fees only, bldg construction mtl								
23	(5)	Rental Rate Blue Book 3Q/99, Cat 988B, 7CY \$97/hr + \$38.95/hr, & Means 1999, Crew B-10U, loading trucks only\$40.05								
24	(6)	DOGM assumed wage for unskilled general labor								
25	(7)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth								
26										
27	(8)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 100 ft push								
28	(9)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, multi shank rippers, speed 1.0 mph								
29										
30	(9)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, multi shank rippers, speed 1.0 mph								
31										
32	(9)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, multi shank rippers, speed 1.0 mph								
33	(9)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, multi shank rippers, speed 1.0 mph								
34	(10)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 50 ft push, avg vol 0.5CY/LF-berm assumed								
35										
36	(9)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, multi shank rippers, speed 1.0 mph								
37	(7)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 50 ft push, 1 ft depth								
38	(11)	Contractor's actual costs, 1991 at E/053/012, Cat 225 Excavator, 20 ft wide road								
39	(10)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 50 ft push, avg vol 0.5CY/LF-berm assumed								
40		Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 400 ft push								
41	(12)	Means 1999 & Blue Book 3Q/99: Cat D9N, U, mtl 2550 lb/CY, 400 ft push								
42	(13)	Means 1999 & Blue Book 3Q/99: Cat 627F P-P, mtl 2550 lb/CY, 2,000 ft haul one-way, grade +/- 4%,								
43	(14)									
44										
45	(00)	DOGM general estimate - mulching								
46	(00)	DOGM general estimate - fertilizing								
47	(00)	DOGM general estimate - manure \$16/ton delivered, \$14 ton/acre spreading								
48	(00)	DOGM general estimate - broadcast seeding								
49	(00)	DOGM general estimate - drill seeding								
50	(00)	DOGM general estimate - hydroseeding								
51		DOGM general estimate - discing								
52	(00)	DOGM general estimate - site cleanup & trash removal								
53										
54	(00)	DOGM general estimate - equipment mobilization								
55										
56	(15)	Means 1999, 010-036-0180, project manager, minimum \$1,860/wk								
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